

BRYOPHYTES ASSOCIATED WITH SPRINGS IN THE AMERICAN SOUTHWEST

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Based on collections, field work and published accounts, a preliminary checklist of bryophytes known from springs in the southwestern US, including southern Utah, Arizona, southern Nevada, and southeastern California, is presented. Biogeographic areas covered include the Colorado Plateau, Madrean Sky Islands, Sonoran Desert, and Mohave Desert. The checklist includes 11 liverworts and 80 mosses in 29 families from ca. 250 springs. The distributions of the bryophytes include three principal groups, widespread species, northern boreal-temperate species, and southern Madrean-subtropical species. Several undescribed species new to science are included. Ecologically, mid- to high elevation (>1000 m) springs support the most species, while low elevation hot desert springs generally support few species. Of the total, 46 species (51%) are considered obligate phreatophytes, requiring water most of the year. Species are characterized by their substrate preferences, with the majority of species either calciphiles or generalists, while very few prefer acidic substrates. Due to human development and loss of spring vegetation and discharge alterations throughout the region, many bryophytes are rare and regionally threatened.